nvironmental Research

An International Journal of Environmental Medicine
and the Environmental Sciences

EDITOR-IN-CHIEF

Irving J. Selikoff

ASSOCIATE EDITORS

E. Cuyler Hammond
B. Holmberg
Renate D. Kimbrough
Paul Kotin
Cesare Maltoni
John A. Moore
R. A. Neal
Jaroslav Teisinger
Kenzaboro Tsuchiya
Ian Webster

Volume 27, 1982

Copyright © 1982 by Academic Press, Inc.

All rights reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (21 Congress Street, Salem, Massachusetts, 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1982 articles are the same as those shown for current articles.

MADE IN THE UNITED STATES OF AMERICA

CONTENTS OF VOUME 27

NUMBER 1, FEBRUARY 1982

T. C. TRAVIS AND E. L. ETNIER. Dietary Intake of Cadmium in the United States: 1920–1975. 1

DONNA KLING AND WILBERT GAMBLE. Cholesterol Biosynthesis in Polychlorinated Biphenyl-Treated Rats. 10

WILLIAM E. PEPELKO. Effects of 28 Days Exposure to Diesel Engine Emissions in Rats. 16

KUNIMITSU KAYA AND TAKASHI MIURA. Effects of Nitrogen Dioxide on Fatty Acid Compositions of Red Cell Membranes, Sera, and Livers in Rats. 24

B. SHARNI RAKHRA AND D. MCEWEN NICHOLLS. Does Cadmium Administration Change Peptide Elongation in Rat Liver? 36

ALLAN H. MARCUS. Multicompartment Kinetic Models for Cadmium. I. Effects of Zinc on Cadmium Retention in Male Mice. 46

ANN G. WYLIE AND PETER SCHWEITZER. The Effects of Sample Preparation and Measuring Techniques on the Shape and Shape Characterization of Mineral Particles: The Case of Wollastonite. 52

ERMINIO GIAVINI, MARIANGELA PRATI, AND CLAUDIO VISMARA. Rabbit Teratology Study with 2,3,7,8-Tetrachlorodibenzo-*p*-dioxin. . . . 74

MERRIL EISENBUD. Origins of the Standards for Control of Beryllium Disease (1947–1949). 79

DAVID P. HANLON, CHARLES SPECHT, AND VERGIL H. FERM. The Chemical Status of Cadmium Ion in the Placenta. 89

J. O. HILL, R. H. GRAY, P. B. DENEE, AND G. J. NEWTON. Comparative Damage to Alveolar Macrophages after Phagocytosis of Respirable Particles. 95

J. M. MCCORMACK AND J. B. HOOK. Effects of Lactation and Nursing on Tissue Concentrations of Polybrominated Biphenyls and on Microsomal Enzyme Activity in Mammary Gland and Liver in Maternal Rats. 110

T. L. SANDERS, A. W. CONKLIN, R. A. GELMAN, R. R. ADEE, AND K. RHOADS. Pulmonary Toxicity of Mount St. Helens Volcanic Ash. . 118

ROBERT J. ALLEN AND RICHARD A. WADDEN. Analysis of Indoor Concentrations of Carbon Monoxide and Ozone in an Urban Hospital. . . 136

BETH A. HART, MARLENE ABSHER, AND DAVID SYLWESTER. The Effect of Beryllium on the Growth of Human Lung Fibroblasts. 150

Bradley J. Collins and Nancy J. Sell. Lead Contamination Associated with Snowmobile Trails. 159

Joyce W. Hawkes and Carla M. Stehr. Cytopathology of the Brain and Retina of Embryonic Surf Smelt (*Hypomesus pretiosus*) Exposed to Crude Oil. 164

Indira Chakravarty and Renuka Sreedhar. Interaction between Parathion Toxicity and Protein Malnutrition. 179

L. P. Srivastava, S. K. Khanna, G. B. Singh, and C. R. Krishna Murti. *In Vitro* Studies on the Biotransformation of Metanil Yellow. 185

Craig D. Woodworth, Brooke T. Mossman, and John E. Craighead. Comparative Effects of Fibrous and Nonfibrous Minerals on Cells and Liposomes. 190

D. B. Peakall, D. J. Hallett, J. R. Bend, G. L. Foureman, and D. S. Miller. Toxicity of Prudhoe Bay Crude Oil and Its Aromatic Fractions to Nestling Herring Gulls. 206

Jadwiga Chmielnicka, Jadwiga A. Szymańska, and Jolanta Tyfa. Disturbances in the Metabolism of Endogenous Metals (Zn and Cu) in Nickel-Exposed Rats. 216

D. Rouhier, C. André, C. Allard, J. Gillon, and R. Brette. Malignant Alpha Chain Disease and Exposure to Asbestos. 222

James H. Dauber, Milton D. Rossman, and Ronald P. Daniele. Pulmonary Fibrosis: Bronchoalveolar Cell Types and Impaired Function of Alveolar Macrophages in Experimental Silicosis. 226

Letter to the Editor. 237

Book Review. 238

Announcement. 240

Number 2, April 1982

Foreword. iii

Giovanni F. Rubino, Giovanni Scansetti, Giorgio Piolatto, and Enrico Pira. The Carcinogenic Effect of Aromatic Amines: An Epidemiological Study on the Role of *o*-Toluidine and 4,4-Methylene bis (2-Methylaniline) in Inducing Bladder Cancer in Man 241

P. F. Holt. Translocation of Asbestos Dust through the Bronchiolar Wall 255

John Kai-Hong Kam. Evaluation of Mutagenic Activity of Cooking Oil Vapors by Mouse Sperm Abnormality Test. 261

R. G. Butler, W. Trivelpiece, and D. S. Miller. The Effects of Oil, Dispersant, and Emulsions on the Survival and Behavior of an Estuarine Teleost and an Intertidal Amphipod. 266

Julian Heicklen, Richard Lundgard, Kenneth Partymiller, Fred Ferguson, Cecelia Putman, Walter Sapanski, Joanne Tankard, and Leonard Billups. Chronic Inhalation Study of Mice Subjected to Diethylhydroxylamine, Nitroethane, and Diethylamine Hydrogen Sulfite. 277

Donald C. Malins and William T. Roubal. Aryl Sulfate Formation in Sea Urchins (*Strongylocentrotus droebachiensis*) Ingesting Marine Algae (*Fucus distichus*) Containing 2,6-Dimethylnaphthalene. . . . 290

David F. Goldsmith. Calculation of the Bias in the Odds Ratio Illustrated by a Study of Saccharin Use and Bladder Cancer. 298

K. Sugiura, M. Goto, and Y. Kurihara. Effect of Cu^{2+} Stress on an Aquatic Microcosm: A Holistic Study. 307

William L. Reichert and Usha Varanasi. Metabolism of Orally Administered Naphthalene in Spawning English Sole (*Parophrys vetulus*). 316

Robert Burrell and Ragnar Rylander. Further Studies on Inhaled Endotoxin-Containing Bacteria. 325

Mary E. Schultz and R. Jack Schultz. Induction of Hepatic Tumors with 7,12-Dimethylbenz[*a*]anthracene in Two Species of Viviparous Fishes (Genus *Poeciliopsis*). 337

Merle L. Blank, Walden Dalbey, Edgar A. Cress, Susan Garfinkel, and Fred Snyder. Pulmonary NO_2 Toxicity: Phosphatidylcholine Levels and Incorporation of [^{3}H]Thymidine into DNA. . 352

Daniel H. Matulionis. Pulmonary Tissue and Cigarette Smoke. 1. Cellular Response to Hydrocortisone. 361

Alice D. Stark, Ruth Fitch Quah, J. Wister Meigs, and Edward R. DeLouise. The Relationship of Environmental Lead to Blood-Lead Levels in Children. 372

J. Depasse. Influence of the Sialic Acid Content of the Membrane on Its Susceptibility to Chrysotile. 384

Betti Reiss, Sondra Solomon, Charles Tong, Marcia Levenstein, Saul H. Rosenberg, and Gary M. Williams. Absence of Mutagenic Activity of Three Forms of Asbestos in Liver Epithelial Cells. . 389

William J. Scheuchenzuber, Arian Zarkower, and Mary Lou Eskew. Immunological Alterations in the Mouse following Injection or Inhalation of Silica and Olivine Dusts. 398

CAROL T. WALSH. The Influence of Age on the Gastrointestinal Absorption of Mercuric Chloride and Methyl Mercury Chloride in the Rat. . 412

BRIAN E. BOZELKA AND PETER M. BURKHOLDER. Inhibition of Mixed Leukocyte Culture Responses in Cadmium-Treated Mice. 421

YASUNOSUKE SUZUKI. Carcinogenic and Fibrogenic Effects of Zeolites: Preliminary Observations. 433

MITSURU ANDO. Cadmium Effect on Microsomal Drug-Metabolizing Enzyme Activity in Rat Livers with Respect to Differences in Age and Sex. 446

AYNUR BASLO AND MUZAFFER AKSOY. Neurological Abnormalities in Chronic Benzene Poisoning. A Study of Six Patients with Aplastic Anemia and Two with Preleukemia. 457

DAVID C. BOLTON, BRIAN K. TARKINGTON, YUAN CHUNG ZEE, AND JOHN W. OSEBOLD. An *in Vitro* System for Studying the Effects of Ozone on Mammalian Cell Cultures and Viruses. 466

DAVID C. BOLTON, YUAN CHUNG ZEE, AND JOHN W. OSEBOLD. The Biological Effects of Ozone on Representative Members of Five Groups of Animal Viruses. 476

JUN KAGAWA. Respiratory Effects of 2-hr Exposure to 1.0 ppm Nitric Oxide in Normal Subjects. 485

A. V. ROBINSON. Effect of *in Vitro* Exposure to Hydrogen Sulfide on Rabbit Alveolar Macrophages Cultured on Gas-Permeable Membranes 491

ANNOUNCEMENT. 501

AUTHOR INDEX FOR VOLUME 27. 502

INSTRUCTIONS TO AUTHORS

Manuscripts. Papers may represent original research in any of the disciplines now concerned with man-environmental relationships; it is anticipated that the relevance of the findings to broad problems of environmental biology and environmental medicine will be considered. Analytical and integrative reviews are equally eligible. The editorial emphasis of the Journal is on research concerning health effects of environmental alterations, broadly considered; engineering and control efforts are well served elsewhere.

Selected Book Reviews will be included.

Submission of Manuscripts. These should be submitted in duplicate to any member of the Board of Editors or to ENVIRONMENTAL RESEARCH, Editorial Offices, Environmental Sciences Laboratory, Mount Sinai School of Medicine, Fifth Avenue and 100th Street, New York, New York 10029. Further, prior review of the paper may be undertaken with a member of the Board of Consulting Editors, especially one with particular competence in the area concerned (as, environmental physiology, epidemiology and biostatistics, ecology, occupational medicine, toxicology, anthropology, climatology, air pollution, environmental medicine, geophysics, etc.); this will often expedite consideration of the paper.

Original papers only will be considered. Manuscripts are accepted for review with the understanding that the same work has not been and will not be published nor is presently submitted elsewhere, and that all persons listed as authors have given their approval for the submission of the paper; further, that any person cited as a source of personal communications has approved such citation. Written authorization may be required at the Editor's discretion. Articles and any other material published in *Environmental Research* represent the opinions of the author(s) and should not be construed to reflect the opinions of the Editor(s) and the Publisher.

Authors submitting a manuscript do so on the understanding that if it is accepted for publication, copyright in the article, including the right to reproduce the article in all forms and media, shall be assigned exclusively to the Publisher. The Publisher will not refuse any reasonable request by the author for permission to reproduce any of his or her contributions to the journal.

All papers will be published in English. It is preferable that papers be submitted in English to ensure faithfulness to the author's meaning. If necessary, however, a translation will be arranged.

Form of Manuscript. Manuscripts should be typewritten (not mimeographed) with double or triple spacing and wide margins on high quality bond paper. Subdivision of the article into *Abstract* (50–200 words), *Introduction, Materials and Methods, Results, Discussion, Acknowledgments* and *References* is recommended. However, variations of this format are acceptable if they provide clearer expression of the subject. In addition, section headings are often useful.

The first page of the manuscript should contain the article title, author's name, and affiliation (include zip code where applicable). The second page should contain a proposed running head of fewer than 40 characters and the address of the person to whom proofs are to be sent. In the upper left-hand corner of each following page (including Reference pages, Tables, etc.) please type a shortened form of the title and the surname of the senior author. Please also number each of these pages.

Abbreviations. Follow the usage established by *Chemical Abstracts.* If others are utilized define on first use.

Figures and Tables. Number all figures consecutively with arabic numerals; legends should be typed together on a separate sheet. Lettering on the original figures should be large enough to take a reduction of 50–60 per cent. Graphs should be plotted with black India ink on light blue coordinate paper, no larger than 8½″ × 11″; grid lines that are to show in the engraving should be inked in black. Photographs should be glossy prints (5″ × 7″ or 8″ × 10″) with strong contrasts. X-rays should be right-reading glossy prints.

Tables are to be typed on separate pages and numbered with arabic numerals; a table title should be included.

Footnotes. Footnotes in the text are identified by superscript *numerals* and listed on a separate sheet; in the *tables* by superscript *letters* and placed at the bottom of the table.

References. These are to be cited in the text by the author's name and year of publication. References should be listed alphabetically at the end of the paper in the following order:

Curry, A. S. (1963). Acidic and neutral poisons. *In* "Progress in Chemical Toxicology" (A. Stolman, Ed.), Vol. 1, pp. 135–155, Academic Press, New York.

Waller, R. E., Commins, B. T., and Lawther, P. J. (1965). Air pollution in a city street. *Brit. J. Industr.* **22**, 128–138.

The names of journals should be abbreviated according to the *Index Medicus* or Chemical Abstracts' *Service Source Index*. Include in the reference list articles that are "in press," but incorporate in the text or use footnotes for "manuscript in preparation," "personal communication," or "unpublished observations."

Reprints. A reprint order form will accompany galley proofs. The senior author receives 50 reprints free of charge, and additional copies may be ordered.

Correspondence. Editorial communications should be addressed to ENVIRONMENTAL RESEARCH, Editorial Offices, Environmental Sciences Laboratory, Mount Sinai School of Medicine, Fifth Avenue and 100th Street, New York, N.Y. 10029. Business correspondence and information concerning subscriptions should be addressed to Academic Press, Inc., Journal Production Department, 111 Fifth Avenue, New York, N.Y. 10003.